

OSTEOINDUCTIVE BONE MATERIAL

ABSTRACT

Osteogenic bone implant compositions that approximate the chemical composition of natural bone are provided. The organic component of these implant compositions is osteoinductive despite the presence of the inorganic component and, further, is present in an amount sufficient to maximize the regenerative capabilities of the implant without compromising its formability and mechanical strength. The composition may be an osteoinductive powder, including demineralized bone matrix (DBM) particles, a calcium phosphate powder, and, optionally, a biocompatible cohesiveness agent. The powder may be combined with a physiologically-acceptable fluid to produce a formable, osteoinductive paste that self-hardens to form a poorly crystalline apatitic (PCA) calcium phosphate having significant compressive strength. The bone implant materials retain their cohesiveness when introduced at an implant site and are remodeled into bone *in vivo*. Methods for using these implant materials to repair damaged bone and a method of assaying the content of DBM particles, by weight, in a bone implant material are also provided.